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(FILE 'HOME' ENTERED AT 10:50:29 ON 21 FEB 2002)

FILE 'REGISTRY' ENTERED AT 10:50:36 ON 21 FEB 2002

L1 379090 S AZO?  
L2 3121 S L1 AND C.I.  
L3 3048 S L1 AND (RED OR SCARLET OR YELLOW OR GREEN OR BLUE OR PURPLE OR ORANGE  
OR VIOLET OR PIGMENT OR DYE OR FAST OR BRILLIANT)  
L4 1 S CHLORINE DIOXIDE/CN  
L5 4 S (BORATE OR BORIC ACID)/CN  
SEL NAME L4  
SEL NAME L5  
FILE 'CA' ENTERED AT 11:07:26 ON 21 FEB 2002  
L6 9076 S L4 OR E1-25 OR CLO2  
L7 92035 S L5 OR E26-52 OR H3BO3 OR H2BO3 OR HBO32 OR BO3 OR BO33  
L8 132808 S L2-3  
L9 40755 S AZO? (6A) (DYE OR PIGMENT OR COLOR)  
L10 59056 S AZO  
L11 6222 S L8-10 AND (BUFFER OR PH(2A) (8## OR 9##))  
L12 2612 S L8-10 AND L7  
L13 154 S L11-12 AND MASK?  
L14 69 S L8-10 AND L6  
L15 2569 S L6 (8A) (DETECT? OR DETERMIN? OR TEST? OR MEASUR? OR MONITOR? OR  
SENSE# OR SENSOR OR SENSING OR PROBE# OR PROBING OR ANALY? OR ASSAY?  
OR QUANTITIF? OR QUANTITAT? OR ESTIMAT? OR EVALUAT? OR IDENTIF? OR  
REACT? OR DISCOLOR? OR DECOLOR?)  
L16 26 S L14 AND L15  
L17 214 S L11 AND L12  
L18 7 S L13 AND L17  
L19 23 S L17 AND (AMMONI? OR NH3)  
L20 35 S L17 AND (CHLORI### OR BROMI### OR HALOGEN)  
L21 83 S L16, L18-20

=> d 121 bib, ab 1-83

L21 ANSWER 6 OF 83 CA COPYRIGHT 2002 ACS  
AN 132:202391 CA  
TI Colorimetry with amaranth or Evans Blue azo dyes for determination of  
residual chlorine dioxide in water  
IN Mantisi, Frederick; Gautier, Jean-Pierre  
PA Elf Atochem S.A., Fr.  
SO Eur. Pat. Appl., 9 pp.  
PI EP 985929 A1 20000315 EP 1999-401774 19990715  
FR 2783050 B1 20001208  
WO 2000014530 A1 20000316 WO 1999-FR1727 19990715  
PRAI FR 1998-11272 A 19980909  
AB A colorimetric method for the detn. of residual ClO2 (as water purifn.  
agent) in com. water supplies (esp. potable waters), consists of prepn. of  
an anal. soln. contg. an azo dye, with a color intensity modified by the  
presence of ClO2, in addn. to a borate buffer and one or more masking  
agents. The azo dye is amaranth or Evans Blue, which is present in  $1 \times 10^{-6}$   
and  $1 \times 10^{-3}$  M, preferably  $2 \times 10^{-5}$  and  $8 \times 10^{-4}$  M. The borate buffer is present  
in concn. of  $5 \times 10^{-3}$  and 0.1 M. The pH is then adjusted to 9.2 prior to  
colorimetric anal., at 521 nm for amaranth and 606 nm for Evans Blue.

L21 ANSWER 8 OF 83 CA COPYRIGHT 2002 ACS

AN 131:280692 CA

TI Spectrophotometric determination of chlorine dioxide with Active Scarlet

Red K 2BP  
AU Feng, Yijun; Fu, Qinghong; Xie, Jiali; Shen, Yeqing; Du, Bingfan  
CS Department of Chemistry, Sichuan University, Chengdu, 610064, Peop. Rep.  
China  
SO Lihua Jianyan, Huaxue Fence (1999), 35(6), 268-269  
AB A method for the spectrophotometric detn. of ClO<sub>2</sub> with Active Scarlet Red K  
2BP was presented. ClO<sub>2</sub> can oxidize Active Scarlet Red K 2BP and cause  
color-fading of the dyestuff. The detg. wavelength was 535 nm, the linear  
range 0.172-6.72 µg/mL, and the upper and lower detection limits were 6.72  
and 0.172 µg/mL resp. ClO<sub>3</sub>- and ClO- had interferences on the detn. The  
results were consistent with those by iodometry.

L21 ANSWER 10 OF 83 CA COPYRIGHT 2002 ACS

AN 130:217266 CA

TI Broad range total available chlorine test strip

IN Wu, Wen H.

PA Integrated Biomedical Technology, Inc., USA

SO U.S., 14 pp., Cont.-in-part of U.S. Ser. No. 822,570.

PI US 5888758 A 19990330 US 1998-25676 19980218

US 5811254 A 19980922 US 1997-822570 19970319

US 5976823 A 19991102 US 1999-256001 19990223

PRAI US 1997-822570 19970319

AB A compn., method, and test device for detg. the total available chlorine  
concn., and the relative amts. of free and bound chlorine, of a test sample  
are disclosed. The test device includes a test pad having a suitable  
carrier matrix incorporating an indicator reagent compn. capable of  
converting combined available chlorine to free available chlorine and of  
interacting with free available chlorine to produce a detectable and  
measurable response for total available chlorine over a range of 0 to over  
5000 ppm total available chlorine in the test sample. An indicator reagent  
compn. contains: (a) an indicator dye that is responsive to free available  
chlorine, such as tetramethylbenzidine, (b) a buffer, (c) a surfactant, (d)  
an optional catalyst, and (e) an optional polymer. An indicator reagent  
compn. is incorporated into a carrier matrix, like filter paper, to provide  
a test pad useful in a dry phase total available chlorine assay of a test  
sample, such as a sanitizing soln. for a hemodialysis unit.

L21 ANSWER 14 OF 83 CA COPYRIGHT 2002 ACS

AN 129:19417 CA

TI Comparison of the ACVK and LGB methods for measuring chlorine dioxide in  
drinking water

AU Hofmann, Ron; Ye, Quanfang; Andrews, Robert C.

CS Department of Civil Engineering, University of Toronto, Toronto, ON, M5S  
1A4, Can.

SO Proc. - Water Qual. Technol. Conf. (1997) P12F/1-P12F/15

AB Two spectrophotometric methods for measuring residual ClO<sub>2</sub> in drinking  
water, one using acid chrome violet K (ACVK) reagent and the other using  
lissamine green B (LGB), were evaluated and compared. The linear range  
(without diln., at 20°) of the LGB method was 0.02-2 mg/L, while that using  
ACVK was 0.08-2.5 mg/L. Both methods were free of interferences from Cl,  
chloramines, chlorite, and chlorate, at concns. >5 mg/L. The LGB method  
was also unaffected by permanganate at concns. as high as 6 mg/L, however,  
permanganate did cause a significant neg. error in ClO<sub>2</sub> measurements when  
using ACVK.

L21 ANSWER 15 OF 83 CA COPYRIGHT 2002 ACS

AN 128:326106 CA

TI Chlorites and chlorates: field tools to monitor chlorine dioxide treatment

AU Muller, M. C.; Aubay, M.; Gibert, M.; Bergeon, T.; Mantisi, F.  
CS Departement Recherche Le GRAAL, Anjou Recherche, Maisons Laffitte, Fr.  
SO Proc. - Water Qual. Technol. Conf. (1997) 4B3/1-4B3/19  
AB Chlorine dioxide is often used as an alternative to chlorine (for disinfection in drinking water prodn. and distribution) because of its advantage in limiting the formation of chlorination byproducts. However, the use of chlorine dioxide also leads to the formation of chlorides and oxichlorine species, such as chlorites and chlorates. It is important to have reliable anal. methods to monitor their formation and presence. The ref. method for the detn. of ClO<sub>2</sub><sup>-</sup> and ClO<sub>3</sub><sup>-</sup> is ion chromatog. This method, which is complex and costly, must be complemented by field methods to allow operators to carry out regular on-site anal. The method developed is based on the oxidn. of o-tolidine by chlorine dioxide (formed by chlorite under acidic conditions) or by chlorine (formed by chlorate under other acidic conditions). The concns. are detd. by spectrophotometric measurement. The operating conditions, such as reagent concn., kinetics, measurement wavelength, and sample pretreatment, were optimized. Spiked waters as well as real water samples were analyzed by the method developed and by ion chromatog.

L21 ANSWER 20 OF 83 CA COPYRIGHT 2002 ACS  
AN 125:291830 CA  
TI Biochemical method for chlorine dioxide determination  
AU Tinoco, Raunel; Hernandez-Saavedra, Daniel; Ochoa, Jose L.; Vazquez-Duhalt, Rafael  
CS Instituto Biotecnologia, UNAM, 62271, Mex.  
SO Anal. Biochem. (1996), 241(1), 18-22  
AB Chlorine dioxide is a disinfectant used worldwide. In this article, a new enzymic method for the detn. of chlorine dioxide has been developed. This rapid spectrophotometric assay is able to detect from 0.2 to 4 mg/L of chlorine dioxide. The method is based on the capacity of horseradish peroxidase to decolorize reactive yellow 17 in the presence of chlorine dioxide. The effects of several compds. on the assay have been detd. Except sodium hypochlorite, no interference was detected with 18 compds. including chlorides, sulfates, carbohydrates, amino acids, proteins, and orgs. The biochem. method is faster and easier than the previous volumetric, amperometric, and colorimetric methods which are laborious and time-consuming.

L21 ANSWER 24 OF 83 CA COPYRIGHT 2002 ACS  
AN 122:286071 CA  
TI Process for measuring magnesium in biological fluids  
IN Steinman, Gary D.  
PA David Diagnostics, Inc., USA  
SO U.S., 8 pp. Cont.-in-part of U.S. Ser. No. 783,131, abandoned.  
PI US 5397710 A 19950314 US 1992-949531 19921105  
PRAI US 1991-783131 19911028  
AB A process for rapidly and conveniently measuring the magnesium concn. of a biol. fluid, such as blood or urine, is carried out by fixing amts. of a chelatometric dye, metal cation masking agents, a chelating agent, an alk. buffer, and a stabilizer on a bibulous material covered with a semipermeable membrane, adding the test specimen, and measuring the amt. of color change of the dye at a selected wavelength. The amt. of color change is proportional to the quantity of magnesium in the original specimen and can be measured by visual comparison to a std. color chart or with a dedicated reflectance photometer. Furthermore, a method is given for expanding the range of linearity. The method for making the dry indicator includes coating bibulous material with a reaction soln. which is dried thereon, followed by coating this material with an org. soln. which is dried thereon. The

dry indicator compn. includes a dihydroxy complexometric dye, a masking agent, a stabilizer, an alk. buffer, a chelating agent, and a bibulous material.

L21 ANSWER 25 OF 83 CA COPYRIGHT 2002 ACS

AN 122:247816 CA

TI Highly selective spectrophotometric determination of chlorine dioxide in water using rhodamine B

AU Xin, Zhang; Jinyu, Zhao

CS Dep. Appl. Chem., Anhui Agric. Univ., Hefei, 230036, Peop. Rep. China

SO Analyst (Cambridge, U. K.) (1995), 120(4), 1199-200

AB A method for the spectrophotometric detn. of chlorine dioxide in the presence of other chlorine species, viz., free chlorine, hypochlorite, chlorite, chloramine and chlorate, was developed. The detection limit is 0.04 mg L<sup>-1</sup> of chlorine dioxide; the calibration graph is linear over the range 0-1.5 mg L<sup>-1</sup> of chlorine dioxide. Free chlorine concns. up to 40 mg L<sup>-1</sup> and excess of oxychlorine species could be tolerated without interference, the method is rapid, sensitive and highly selective.

L21 ANSWER 45 OF 83 CA COPYRIGHT 2002 ACS

AN 111:159848 CA

TI Determination of residual ozone or chlorine dioxide in water with ACVK - an updated version

AU Masschelein, W. J.; Fransolet, G.; Laforge, P.; Savoir, R.

CS Eaux Direct. Lab., Comp. Intercomm. Bruxelloise, Brussels, B-1180, Belg.

SO Ozone: Sci. Eng. (1989), 11(2), 209-15

AB The detn. of residual O<sub>3</sub> or residual ClO<sub>2</sub> in water can be carried out with Acid Chrome Violet K (ACVK), now available as dye for anal. use under the name of Alizarin Violet 3R. The discoloration of the dye in an NH<sub>3</sub>-NH<sub>4</sub>Cl buffered soln. of pH 8.1-8.5 is specific both for O<sub>3</sub> and for ClO<sub>2</sub> without interference of Cl<sup>-</sup>, chloramines, ClO<sub>2</sub><sup>-</sup>, or ClO<sub>3</sub><sup>-</sup> in concns. possibly encountered in treated drinking water. The detection limit of 0.02 mg/L and std. deviation of 0.01 mg/L were obtained for both O<sub>3</sub> and ClO<sub>2</sub>.

L21 ANSWER 51 OF 83 CA COPYRIGHT 2002 ACS

AN 105:210400 CA

TI Storage-stable dye solutions

IN Wolff, Joachim; Wolf, Karlheinz; Marschner, Werner

PA Bayer A.-G., Fed. Rep. Ger.

SO Eur. Pat. Appl., 28 pp.

PI EP 167952 A2 19860115 EP 1985-108117 19850629

US 4685933 A 19870811 US 1985-748267 19850624

PRAI DE 1984-3425813 19840713

AB Concd. aq. solns. of org. dyes and water-solubilizing agents contain cyanamides N≡CNH<sub>2</sub> or RC(:NH)NH<sub>2</sub> (I; R = NHC≡N, NHCONH<sub>2</sub>, NHCONHMe). These aq. solns. may contain an anionic reactive dye 7-35, a soly.-increasing water-miscible org. compd. and/or hydrotrope and/or dispersing agent 0-30, N≡CNH<sub>2</sub> or I 0.1-15, an inorg. salt 0-10, and a buffer 0-5%. Thus, to 997.5 g aq. suspension contg. a sulfonated (phenylazo)naphthalene dye with a chlorodifluoropyrimidine group 11, inorg. salt mixt. 1, and H<sub>3</sub>BO<sub>3</sub> 0.5%, 2.5 g dicyandiamide was added with stirring. A storage-stable aq. soln. was obtained showing no dye hydrolysis after 4 wk at 40°. This soln. dyed rayon in a red-yellow tone.

L21 ANSWER 77 OF 83 CA COPYRIGHT 2002 ACS

AN 72:50600 CA

TI Spectrophotometric and complexometric determination of lead using pyridylazo, antipyrilazo, and thiazolylazo compounds

AU Gusev, S. I.; Nikolaeva, E. M.  
CS Perm State Med. Inst., Perm, USSR  
SO Zh. Anal. Khim. (1969), 24(11), 1674-8  
AB The interaction of Pb(II) with 2-(5-bromopyridylazo)-5-diethylaminophenol (I), 2-(4-antipyrilazo)-5-diethylaminophenol (II) and 2-(2-thiazolylazo)-5-diethylaminophenol (III) was studied. Two complexes were obtained in cryst. state. All 3 reagents are yellow at pH 6 with  $\lambda_{\text{max}}$  at 440, 460, and 490 m $\mu$ , resp. The  $\lambda_{\text{max}}$  of the Pb complexes are at 520 m $\mu$  for the II complex and at 575 m $\mu$  for the I and III complexes. The Pb-I complex shows max. contrastibility, its molar absorptivity is  $4.9 \times 10^4$ , while the other complexes have much lower values. Complexometric and photometric methods were developed for detg. Pb in solns. of Pb salts in the presence of other ions and in Sb-Cu-Sn-Pb alloys using I. The absorbance of the complex solns. is proportional to Pb concn. in the 1-4.5  $\mu\text{g}$  Pb/ml range. In the photometric detn. add to the soln. 5-7 ml N NH<sub>4</sub>OH, 2 ml 10% N a citrate, and 0.4 ml 2.5% KCN (to mask other ions). Then add 0.8 ml  $0.3 \times 10^{-3}\text{M}$  I and det. the absorbance photometrically. To decomp. the alloy add 1.5 ml HNO<sub>3</sub> to 0.35 g of the sample, heat until full decompn., dil. to 300 ml with H<sub>2</sub>O, and continue as above on a 0.3-0.8 ml aliquot. I can also be used in an extn.-photometric method for Pb detn. Place into a separatory funnel 0.1-0.7 ml  $0.3 \times 10^{-3}\text{M}$  Pb(NO<sub>3</sub>)<sub>2</sub>, 0.8 ml  $0.3 \times 10^{-5}\text{M}$  I, adjust to 10 ml with a pH 9.24 borate buffer soln., and ext. with 5 ml CHCl<sub>3</sub> by shaking for 30 sec and det. the absorbance of the violet colored complex at 560 m $\mu$ . The absorbance is proportional to Pb concn. in the 0.1-8  $\mu\text{g}/\text{ml}$  range. In the complexometric detn. dissolve the alloy (0.1 g) in 1.5 ml HNO<sub>3</sub>, dil. to 30 ml with H<sub>2</sub>O. To an aliquot add pH 4.5 acetate buffer, some concd. thiourea soln., 1-2 drops 0.05% I, and titrate with Complexon III from violet to yellow.

=> log y

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